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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,392	04/04/2001	Martin Weston	87805-9025-00	2929

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EXAMINER

TUCKER, WESLEY J

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 02/25/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,392

Applicant(s)

WESTON ET AL.

Examiner

Wes Tucker

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8.9.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Please insert headings for Background of the Invention, Brief Summary of the Invention, Brief Description of Drawings, and Detailed Description of the Invention.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. In the brief description of drawings, Fig. 1 is described as a known linear filter and should therefore be considered prior art.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,181,382 to Kieu et al.

With regard to claim 4, Kieu discloses a video processing apparatus comprising a slope detector and a spatial filter having a positive filter aperture (Fig. 5), a linear filter aperture (Fig. 7) and a negative filter aperture (Fig. 6). Here Kieu discloses slope detectors and filters for various positive, negative, and linear slopes.

Kieu further discloses the apparatus wherein the positive filter aperture is employed upon detection of any positive slope in excess of a defined positive threshold, the negative filter aperture is employed upon detection of any negative slope in excess of a defined negative threshold, and the linear filter aperture is employed otherwise (column 3, lines 50-65). Kieu discloses determining which filter is most appropriate for the given edge by passing the edge through a different filter for each edge and determining which filter most closely represents that edge. So the thresholds are interpreted as the values used to choose which filter output to use as the choice filter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,181,382 to Kieu et al. and U.S. Patent 5,003,618 to Meno.

With regard to claim 1, Kieu discloses a video processing apparatus comprising a set of spatial filter apertures and a slope detector, the apparatus selecting the

appropriate filter aperture in accordance with the output of the slope detector and taking weighted contributions from pixels in the selected filter aperture (Figs. 5 and 6 and column 10, lines 28-45). Kieu discloses a method where edge directions or angles are determined by passing the image through several spatial filters for several different angles and choosing the most appropriate filter according to the output of the angle specific filters (Figs. 5 and 6). Kieu does not explicitly disclose the apparatus wherein the filter aperture weightings sum to unity over a line including the current pixel and sum to zero over side of said line. Meno discloses automatic adaptive digital filtering wherein the weightings sum to unity over a vertical line and the weightings on either side sum to zero (Figs. 2 and 8). Meno teaches that the weightings are chosen in order to give an enhanced image without affecting contrast (col.1, lines 13-16). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to sum to unity the weightings as taught by Meno with the video processing apparatus of Kieu to achieve an enhanced image without affecting contrast.

With regard to claim 2, Meno discloses the line as a vertical line (Figs. 2 and 8).

With regard to claim 3, Meno and Kieu disclose the apparatus of claim 1. Meno explicitly discloses 4 different filter kernels (Figs. 2, 3, 7, and 8) and Kieu discloses 9 different filter kernels (Figs. 5 and 6). In both Meno and Kieu the filter is chosen depending on the slope of the edge as discussed with regard to claim 1. Although Meno and Kieu do not explicitly disclose exactly three different filters, they disclose a

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number and a selection of filters that perform the same function as applicant's invention. It would have been an obvious matter of design choice to have a three-kernel filter.

With regard to claim 5, Kieu discloses the apparatus according to claim 4, but does not disclose wherein in each said filter aperture weighted contributions are taken from pixels with the filter aperture weightings summing to unity over a line including the current pixel and summing to zero over either side of said line. Meno discloses these filter weighting characteristics (Figs. 2 and 8). Meno teaches that the weightings are chosen in order to give an enhanced image without affecting contrast (col.1, lines 13-16). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to sum to unity the weightings as taught by Meno with the video processing apparatus of Kieu to achieve an enhanced image without affecting contrast.

With regard to claim 6, Meno discloses the apparatus wherein the line is vertical (Figs. 2 and 8).

With regard to claim 7, the discussion of claim 3 applies.

5. Other prior art considered pertinent to applicant's invention but not relied upon is as follows:


U.S. Patent 6,427,031 to Price discloses a slope determined filter kernel selection.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 703-305-6700. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker
2-9-04


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